

# ALTIG 308L

## TIG Rods

Stainless and Heat resistant steels

ALTIG 308L is a W 19 9 L/ER 308L type solid TIG welding rod depositing a low C-19Cr 9 Ni weld metal. Suitable for use mainly with Ar shielding gas.

ALTIG 308L is used for the welding of 304 and 304L grade stainless steel. The weld metal has good corrosion resistance properties, including intergranular attack from a range of liquid media at service temperatures <math><300^{\circ}\text{C}</math>. It is used for a wide range of applications including pipework and plate fabrication, vessel production etc. Batch with controlled low ferrite number is available for cryogenic applications.

Low carbon reduces the propensity to intergranular carbide precipitation, which increases the resistance to intergranular corrosion without the use of stabilizers.

TIG rod for welding type AISI 304 and 308 austenitic stainless steels. Excellent mechanical strength and corrosion resistance.



Classification	
EN ISO	14343-A: W 19 9 L
AWS	A5.9: ER 308L

Approvals	
DB	TÜV
●	●

CE

### Chemical analysis (Typical values in %)

C	Mn	Si	P	S	Cr	Ni
0.020	1.8	0.45	$\leq 0.025$	$\leq 0.020$	20	10

### All-weld metal Mechanical Properties

Heat Treatment	Yield Strength (N/mm <sup>2</sup> )	Tensile Strength (N/mm <sup>2</sup> )	Elongation A5 (%)	Impact Energy ISO - V (J)	
				+20 °C	-120 °C
As Welded	$\geq 350$	$\geq 520$	$\geq 35$	$\geq 80$	$\geq 40$

Gas test: 100% Ar

Shielding Gas - EN ISO 14175 : I1

### Materials

1.4541 (X6CrNiTi18-10); 1.4301 (X4CrNi18-10); 1.4311 (X2CrNi18-10)

AISI 304 - 304L - 302

### Storage

Keep dry and avoid condensation

### Current condition and welding position

DC-



### Packaging data

Diam. (mm)	Packaging Type	Weight (kg)	Code
2.0	TUB	5	●
2.4	TUB	5	●

# ALTIG 309L

## TIG Rods

Stainless and Heat resistant steels

ALTIG 309L is a W 23 12 L/ER 309L type solid TIG welding rod depositing a low C-23Cr 12Ni weld metal. Suitable for use mainly with Ar shielding gas.

ALTIG 309L is used for the welding of stainless steels to mild and medium tensile steels. It is ideal for depositing intermediate layers on structural steel prior to depositing 308 grade stainless steel. Also used for the welding of clad steels where service temperatures <300°C.

The weld metal has a delta-ferrite content of ~12% resulting in good resistance to hot cracking.

TIG rod for welding dissimilar steels and for use with undercoats for facings. Good mechanical strengths and resistance to hot oxidation.



Classification	
EN ISO	14343-A: W 23 12L
AWS	A5.9: ER 309L



### Chemical analysis (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Ferrite
0.02	1.8	0.45	≤ 0.025	≤ 0.020	24	13	10-20

### All-weld metal Mechanical Properties

Heat Treatment	Yield Strength (N/mm <sup>2</sup> )	Tensile Strength (N/mm <sup>2</sup> )	Elongation A5 (%)	Impact Energy ISO - V (J)	
				+20 °C	-80 °C
As Welded	≥ 350	≥ 520	≥ 30	≥ 47	≥ 32

Gas test: 100% Ar

**Shielding Gas** - EN ISO 14175 : I1








### Materials

Carbon steel to stainless steel joints,  
Ferrite-Austenite heterogeneous joints ("Black-White"),  
A312 TP309S;  
Corrosion resistance surfacing

### Storage

Keep dry and avoid condensation

### Current condition and welding position

DC-						
						
PA	PB	PC	PD	PE	PF	PG

### Packaging data

Diam. (mm)	Packaging Type	Weight (kg)	Code
1.0	TUB	5	●
1.2	TUB	5	●
1.6	TUB	5	●
2.0	TUB	5	●
2.4	TUB	5	●
3.2	TUB	5	●

# ALTIG 316L

## TIG Rods

Stainless and Heat resistant steels

ALTIG 316L is a W 19 12 3L/ER 316L type solid TIG welding rod depositing a low C-19Cr12Ni2.6Mo weld metal. Suitable for use mainly with Ar shielding gas.

ALTIG 316L is used for the welding of 316 and 316L grade stainless steel. It is used for a wide range of applications including pipework and plate fabrication, vessel production etc.

The weld metal has good resistance to crevice corrosion by oxidising acids.

Type AISI 316L stainless steel bar. Suitable for welding stainless steels with similar chemical composition. Used in the chemical and petrochemical industries.



### Classification

EN ISO	14343-A: W 19 12 3L
AWS	A5.9: ER 316L

### Approvals

DB	TÜV
●	●

CE

### Chemical analysis (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Mo
0.020	1.4	0.45	≤ 0.025	≤ 0.020	19	12.5	2.6

### All-weld metal Mechanical Properties

Heat Treatment	Yield Strength (N/mm <sup>2</sup> )	Tensile Strength (N/mm <sup>2</sup> )	Elongation A5 (%)	Impact Energy ISO - V (J)	
				+20 °C	-120 °C
As Welded	≥ 350	≥ 510	≥ 30	≥ 80	≥ 32

Gas test: 100% Ar

### Shielding Gas - EN ISO 14175 : I1

### Materials

1.4571 (X6CrNiMoTi17-12-2), 1.4583 (X10CrNiMoNb18-12)

1.4401 (X4CrNiMo17-12-2), 1.4435 (X2CrNiMo18-14-3)

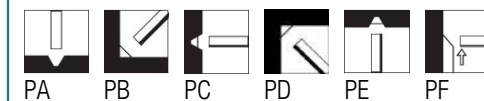
AISI 316L

### Storage

Keep dry and avoid condensation

### Current condition and welding position

DC-



### Packaging data

Diam. (mm)	Packaging Type	Weight (kg)	Code
1.0	TUB	5	●

# ALTIG 347

## TIG Rods

Stainless and Heat resistant steels

ALTIG 347 is a W 19 9 Nb/ER 347 type solid TIG welding rod depositing a niobium stabilised 19Cr 9Ni weld metal. Suitable for use mainly with Ar shielding gas.

ALTIG 347 is used for the welding of 321 and 347 grade stainless steels in a wide range of applications, including the fabrication of pipe, plate and vessels. The weld metal has a high resistance to corrosive media at service temperatures <math><400^{\circ}\text{C}</math>.

The presence of niobium reduces the possibility to intergranular chromium carbide precipitation and thus reduces to susceptibility to intergranular corrosion.

TIG rod for welding stabilized stainless steels. The presence of stabilizers improves corrosion resistance. Used when welding AISI 347 and 321 steels.



Classification	
EN ISO	14343-A: W 19 9Nb
AWS	A5.9: ER 347

Approvals
DB
●

CE

### Chemical analysis (Typical values in %)

C	Mn	Si	P	S	Cr	Ni	Nb
0.04	1.6	0.45	$\leq 0.025$	$\leq 0.020$	19.5	10	0.5

### All-weld metal Mechanical Properties

Heat Treatment	Yield Strength (N/mm <sup>2</sup> )	Tensile Strength (N/mm <sup>2</sup> )	Elongation A5 (%)	Impact Energy ISO - V (J)	
				+20 °C	-120 °C
As Welded	$\geq 400$	$\geq 550$	$\geq 30$	$\geq 65$	$\geq 32$

Gas test: 100% Ar

**Shielding Gas** - EN ISO 14175 : I1

### Materials








1.4541 (X6CrNiTi18-10); 1.4301 (X4CrNi18-10); 1.4550 (X6CrNiNb18-10); 1.4551

AISI 347 - 321

### Storage

Keep dry and avoid condensation

### Current condition and welding position

DC-						
						
PA	PB	PC	PD	PE	PF	PG

### Packaging data

Diam. (mm)	Packaging Type	Weight (kg)	Code
1.0	TUB	5	●
1.2	TUB	5	●
1.6	TUB	5	●
2.0	TUB	5	●
2.4	TUB	5	●
3.2	TUB	5	●